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STATEMENT FOR THE RECORD

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BEFORE THE COMMITTEE ON SCIENCE, SPACE, AND TECHNOLOGY

U.S. HOUSE OF REPRESENTATIVES

HEARING ON NOVEMBER 26, 1991

Thank you for the opportunity to appear before this Committee to comment on H.R.3614, the "National Land Remote Sensing Policy Act." My testimony specifically responds to your request for our views on "the data pricing, distribution, and marketing provisions of H.R. 3614;...the achievements and shortcomings of the data policy established by the current law (P.L. 98-365, The Land Remote Sensing Commercialization Act of 1984)...the merits of amending this policy;...and the proper role, if any, of the Department of the Interior in helping to meet the Administration's commitment to data continuity after Landsat 6."

As you are aware, the Administration has determined that "remote sensing data collections to support national security, global change research and other U.S. government needs beyond Landsat 6 will be provided through the acquisition and operation of a Landsat 7. NASA and DOD will undertake the development and operation of the system. Specific technical and programmatic

details of the program, as well as administration proposals concerning data policy, will be communicated to the Congress concurrent with presentation of the President's budget request for fiscal year 1993."

Before making specific comments on data policy issues and possible roles of the Department of the Interior (DOI) as you have requested, I would like to make a few general comments about Interior's experience in the Landsat program and our overall perspective on the issues that are being discussed.

USGS ROLE IN THE LANDSAT PROGRAM - PAST AND PRESENT

DOI and U.S. Geological Survey (USGS) involvement in civil satellite remote sensing began well before the launch of Landsat-1 (then ERTS-1), and this provides us a unique experience base for commenting on the current program and prospects for the future. The USGS played a major role in defining the technical specifications for Landsat 1, and helped to develop an active program of remote-sensing applications and research throughout the Federal government.

Working with NASA up until 1983, the USGS had responsibility for processing, archiving, and distributing Landsat data. Since 1983 we have continued to cooperate with the Department of Commerce's National Oceanic and Atmospheric Administration (NOAA) and the Earth Observation Satellite (EOSAT) Company, the commercial

Landsat operator, by managing and operating the Landsat archive, and assisting in product generation and distribution from the USGS Earth Resources Observation Systems (EROS) Data Center in Sioux Falls, South Dakota. As USGS Director Dallas Peck testified before this Committee on June 26, 1991, the USGS has operated the Landsat archive (now known as the National Satellite Land Remote Sensing Data Archive) since the beginning of the Landsat program in 1972 and continues to maintain this archive of existing data.

The USGS also administers a brokerage agreement with EOSAT to purchase Landsat data products and services for all civil Federal Government agencies. This service eliminates duplication and extra costs of making separate agency contracts. Federal agencies have purchased almost \$21 million worth of data through the USGS since 1986.

The USGS continues to be a user of Landsat data for operational and research purposes. We have encouraged and promoted the use of Landsat and other remotely sensed data by cooperating with other Federal agencies such as NASA, NOAA, the Department of Defense (DOD), the Department of Agriculture, and the Agency for International Development. We were an active participant in support of Desert Shield and Desert Storm, producing unique and special-purpose image mapping products from Landsat data. The USGS EROS Data Center will serve as NASA's Earth Observing System

(EOS) Land Processes Distributed Active Archive Center and will be responsible for processing and distributing all EOS land-related data and information to the global change research community.

These activities have helped us to understand the appropriate role of remotely sensed data from satellites for civil and national security purposes. This experience is also helping us to participate in the National Space Council's study of future Landsat options that are responsive to the President's decision to continue a "Landsat-type" capability after Landsat 6.

POSSIBLE ROLES FOR DOI IN THE LANDSAT-6 FOLLOW-ON ERA

DOI could participate in the Landsat 6 follow-on in several ways: 1) to provide a focus for consolidating civilian Federal agency and other user inputs to the Joint Program Office; 2) to continue to manage and operate the Government's long-term Landsat data archive; and 3) to continue a historical role in the processing and distribution of Landsat data for NASA, DOD, DOI users, or any/all combinations of users if this proved beneficial and resources were made available.

DOI Responsibility for Consolidating User Input

DOI could continue to coordinate other Federal resource management and environmental monitoring agency requirements for Landsat data and provide a mechanism to gather and integrate

public/private sector data acquisition priorities. This would build on DOI's broad experience with civilian and military users of Landsat data since the beginning of the Landsat program. We provide similar support by chairing the Federal Geographic Data Committee which has recently been given an expanded role to coordinate a broad spectrum of spatial data activities with many other Federal agencies. This is also similar to DOI's chartered responsibility to coordinate the civilian agency use of defense assets through the chairmanship of the Civil Applications Committee.

Landsat Data Archiving

We recommend transfer of responsibility for Landsat data archiving from the Department of Commerce (DOC) to DOI. The Administration has supported the transfer of archiving responsibility as called for in S. 230 to amend P.L. 98-365 which has passed in the Senate and is awaiting action in the House. Passage of S. 230 would ensure that legislative responsibility and funding authority for Landsat archiving are placed together in the same department.

As part of the current Landsat archive responsibility, the USGS is attempting to convert the existing Landsat data to a more durable and manageable media. The USGS archive is also distributing all Landsat MSS data more than 2 years old at the cost of reproduction and distribution. Access to these data at

reasonable cost is increasing their use for global change research and other change detection applications.

The USGS is also developing an improved Landsat information and inquiry capability as part of the U.S. Global Change Research Program. The Global Land Information System (GLIS) is being developed as an on-line computer-based inquiry system that provides users with information about all known or available worldwide land-related global earth science data which are critical to studying global change, including Landsat data. This prototype information system became operational in June 1991 and is now available to any user who wants to determine the availability of land-related data. Information about worldwide holdings of the foreign Landsat ground receiving stations will be added in 1992.

SPECIFIC COMMENTS ON DATA POLICY

The transition to a viable commercial civil satellite remote-sensing industry is clearly not occurring as rapidly as predicted in the early 1980's. Using current technologies, the market for satellite remotely sensed data is not growing at a rate that will sustain the development, launch, and operation of future satellites in the foreseeable future. At the same time, high data prices and use restrictions have significantly increased the cost to the Government and others for using the data and have essentially halted its use by the research community for

important long term environmental studies of global change. The current practice of acquiring Landsat data primarily in response to data orders is also limiting the extent to which the system acquires scientifically needed repetitive coverage of the Earth's land and shallow seas.

The USGS supports the intent of H.R. 3614 to rectify some of these difficulties. However, we also have some concerns with the amendment as proposed.

H.R. 3614 proposes to establish two-level data distribution policy that differentiates between non-profit organizations and commercial users of data. This could be difficult to enforce and could open the door for other potentially dangerous user discrimination policies in the future, both in the United States and by other countries. We are also concerned with the definition of pricing at the "marginal cost of data acquisition, reproduction, and transmission" for non-profit organizations. This appears to be broadened from the recently released U.S. policy on "Data Management for Global Change" which recommends that pricing for global earth science data be set at the "marginal cost of filling a specific user request". The inclusion of "data acquisition" to the pricing equation could lead to differences in interpretation between the commercial operator and the intent of this legislation to provide data at nominal cost to the Government and research community.

Other alternatives could satisfy the intent of the amendment, still preserve the long-standing U.S. policy for non-discriminatory data availability, provide for competitive marketing of user data products, and create an appropriate role for the private sector. We would plan to evaluate potential approaches as part of the programmatic plans for Landsat 7. Marketing of remotely sensed data can best be accomplished by the value-added private sector operating competitively in a free market environment with access to affordably priced unenhanced data from the system operator. A competitive environment for marketing user products will lead to lower prices for all users, both non-profit and commercial. Building a larger market for reasonably priced Landsat data could also provide a long-term foundation for a commercially based Landsat program in the future.

In the near-term, the Government should have substantial oversight of all aspects of the program, including data acquisition, unenhanced data pricing, and negotiation of agreements with foreign ground stations. In this way, the widest possible segment of society would have access to data at modest cost.

CONCLUSION

In closing, Mr. Chairman, I would like to thank you for the opportunity to make these comments on behalf of the DOI and the

USGS about the future of the Landsat program. I hope that we move quickly to make the decisions necessary to continue the Landsat program, while giving adequate consideration to all aspects of the program -- program funding and management, a technical system design that is responsive to civilian and defense requirements, a pricing and marketing approach that maximizes data availability at reasonable cost to all users, a system operation strategy that acquires the maximum amount of data on a repetitive basis, and a data archiving program that preserves the vast Landsat archive for future use. The Department of the Interior and the U.S. Geological Survey will continue to work with Congress, the agencies, and the private sector in an attempt to see that the Landsat program is continued in a way that optimizes benefits to the country and provides a framework for program continuity into the future.